

# **DETERMINING THE NEED FOR A MEDICAL FIRST RESPONDER SERVICE**

## **FINANCIAL MANAGEMENT**

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## **ABSTRACT**

The problem identified in this research project was that there was no medical first responder service provided in Monroe. An advanced life support emergency medical service was being provided by Union County, within which Monroe is located, but no medical first responder service was being provided.

The purpose of this applied research project was to determine if the Monroe Fire Department should implement a medical first responder service in Monroe.

The descriptive research method and a survey of similar cities to Monroe was used to accomplish this purpose and to answer the following four questions:

1. What are the expected benefits from a medical first responder service?
2. Why should a medical first responder service be provided by the fire department?
3. How do other fire departments similar to Monroe provide medical first responder service?
4. What are the financial issues involved with providing a medical first responder service?

The procedures used in this research project were to analyze the available material related to the problem stated and to clarify and report the way things were at that time and surveys to solve the organizational problem.

The results of this study showed that a medical first responder service would be beneficial for the citizens in Monroe and that the Monroe Fire Department should begin providing this service.

The recommendation was that the Monroe Fire Department should develop and implement a medical first responder service to meet the needs of the community. This recommendation also included the need for additional research to plan and implement a medical first responder program.

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## INTRODUCTION

The problem is that there is no medical first responder service provided in the city of Monroe. The emergency medical service in Monroe is currently being provided by Union County through a contract with Union Emergency Medical Service known as Union EMS. The city of Monroe is located in Union County, North Carolina.

The purpose of this applied research project is to determine if the Monroe Fire Department should implement a medical first responder service in Monroe. The descriptive research method and a survey of similar cities will be used to accomplish this purpose.

This research project utilizes the descriptive research method and a survey to answer the following questions:

1. What are the expected benefits from a medical first responder service?
2. Why should a medical first responder service be provided by the fire department?
3. How do other fire departments similar to Monroe provide medical first responder service?
4. What are the financial issues involved with providing a medical first responder service?

It is understood that if this research shows the need for a medical first responder service in Monroe, that additional research will be needed to determine the proper planning and implementation process.

## **BACKGROUND AND SIGNIFICANCE**

The city of Monroe was incorporated on December 24, 1844 with the first reported mention of fire service in 1899 when Monroe was praised for its volunteer fire service, which was under the direction of Chief J. S. Welch. (Kendrick, 1995) Monroe's fire service progressed until 1980 when the then full time paid Monroe Fire Department was consolidated with the full time paid Monroe Police Department to become the Monroe Public Safety Department. The Monroe Fire Department provided the emergency medical service for Monroe and Union County prior to this consolidation. The Monroe Public Safety Department continued to provide emergency medical service for Monroe and Union County until 1985 at which time Union County began providing emergency medical service for Monroe and Union County. At that time the Monroe Public Safety Department discontinued any type of medical service or first responder service in Monroe. The Public Safety Department provided fire service in Monroe from 1980 until 1999 when the Monroe City Council decided to separate the fire and police responsibilities. Based upon this decision the Monroe Fire Department was created and is now providing fire protection service to the citizens of Monroe. The Monroe Fire Department currently has 39 personnel positions with plans to expand to 54 personnel within two years. Public safety officers are continuing to assist as firefighters until the fire department reaches full personnel strength. The department operates three engines, one ladder, and one squad/rescue apparatus out of three stations and serves a population of approximately 24,000 residents in a 25 square mile area. The department currently provides fire suppression services, fire prevention, rescue, and hazardous materials management with an annual call volume of approximately 750 calls, however it does not currently provide any emergency medical response service. A fire chief has been appointed and has the responsibility of organizing the department to provide the appropriate level of

services for the city. Union County now contracts with Union Regional Medical Center, which is the area hospital and is located in Monroe, to provide Emergency Medical Services under the name Union EMS. Union EMS provides advanced life support service and transport services for all of Monroe and Union County with eight ambulances and two quick response units staffed 24 hours per day. Three of the eight ambulances are stationed at two separate locations within the city of Monroe. The average response time for Union EMS within the city is 7.62 minutes.

This research project is an important step in the decision as to whether or not the Monroe Fire Department should provide a medical first responder service. If it is determined that a medical first responder service is needed in Monroe, then this recommendation will be presented for approval by the city administration and will be implemented if approved. The main importance of this project is the impact it will have on the quality of life in Monroe.

This research project relates specifically to Unit 6, "*Analysis*" of the National Fire Academy's Financial Management Course. This unit deals with several issues regarding analysis of fire service and related programs. Specifically this project will relate to the benefit-cost section of this unit which compares the monetary value of the benefits of a proposed action to the cost incurred, do the benefits of a medical first responder service exceed the costs of the service. The Financial Management text points out that there are some variables that do not equate very successfully to monetary figures. Issues such as public perception, quality of life, political influence, social values, and emotional losses are extremely difficult to compare in monetary terms.

## LITERATURE REVIEW

### 1. What are the expected benefits from a medical first responder service?

The Emergency Medical Services (EMS) system is a network of resources in which people, equipment, and communications are organized to provide medical care. First responders are a critical part of this system because minutes and even seconds count in the survival of a sick or injured patient. (Goold, 1997)

Firefighters have always stood ready to save lives and property, as a medical responder their abilities to serve within this tradition will be enhanced. They can still be firefighters and can also become an important part of the EMS system with responsibility for assessment and emergency medical care of a wide variety of sick and injured patients. (Dickinson, 1999)

There are millions of lives saved every year through medical care. However, if hospitals stood by themselves, many people would die before reaching the hospital. Fortunately it is possible to provide medical service in the field through a chain of human resources call an EMS system. (Bergeron, 1999) “When this system is activated, care begins at the emergency scene and continues during transport to the medical facility”. Bergeron also explains the roles of the first responder as being to gain access to the patient, determine what is wrong with the patient, and provide the necessary emergency care based on the situation.

### 2. Why should a medical first responder service be provided by the fire department?

The National Fire Protection Association (NFPA) Standard 1201, *Developing Fire Protection Services for the Public* (1994, p. 1201-5) Section 2-1 defines the purpose of a fire department as: the fire department shall have programs, procedures, and organization for preventing the outbreak of fires in the community and to minimize the danger to persons and damage to

property caused by fires that do occur. The fire department shall also carry out other compatible emergency services as mandated.

Section 2-4.1 of this standard states, “Preservation of human life shall be the primary responsibility of the fire department during fires and other emergencies”.

In a study conducted by the North Carolina League of Municipalities on the Public Safety Delivery System for the city of Monroe (Pickard, 1998) it was strongly recommended that the newly formed fire department implement a medical first responder service to provide additional service to the community.

In a follow up report, *America Burning Revisited* (1987), the report documented a declining demand for fire suppression services and identified the increasing demand for additional service in areas of emergency medical services, hazardous materials protection and disaster preparedness.

Loeb (1993) states that N.C. General Statute 16A-291 authorizes a municipality to appoint a fire chief, employ firefighters, organize a fire department and prescribe the duties of the fire department. He points out however, that the municipality is not required to furnish fire protection services as a municipal service, but is authorized to do so if they desire.

Paulsgrove (1997) states that it is quite possible that the first organized fire protection occurred in Rome in 24B.C. when Augustus became ruler there. The fire service has since grown to nearly 30,000 fire departments in the United States alone. Paulsgrove goes on to indicate that the role of the fire service has changed over the years with the community having an expectation of service for whatever emergency may occur and identifies the growing need for hazardous materials, rescue, and emergency medical services by the fire service.



Goold (1997) reports that first responders come from all walks of life including fire departments, police personnel, school teachers, park rangers, bus drivers, and community volunteers.

According to Chief Richard A. Marinucci (1999) then President of the International Association of Fire Chiefs (IAFC), the fire service has always had an important role in EMS and EMS is extremely important to the fire service. The IAFC endorsed emergency care as a legitimate role of the fire service by a resolution in 1975. In 1991 the IAFC and the International Association of Fire Fighters (IAFF) adopted a joint resolution reaffirming that prehospital care was a major service provided by the fire service. EMS has evolved into a critical component within an overwhelming majority of fire departments.

### 3. How do other fire departments similar to Monroe provide medical first responder service?

According to Page (1997) the vast majority of fire departments in the United States provide some type of emergency medical service. This service ranges from basic first aid to advanced life support and transport service. In the late 1960's some fire departments became pioneers in providing advanced life support service. This began to change the internal and external expectations of the fire service in America regarding medical emergencies. The fire service has since become a major provider in emergency medical services.

Haase (1996) reported that the primary response to emergency medical events is one of the fastest growing aspects of today's fire service. He goes on to say; "the main reason these services are being rendered is to provide the public with prompt medical attention in times of emergency".

In the *U. S. Fire Department Profile* completed by the National Fire Protection Association, Karter (1999) reported that 53.6 percent of fire departments in the U. S. provide some form

medical service to their community and 46.4 percent provide no medical service in their community.

The American fire service has been providing rescue service and rendering first aid to the sick and injured long before the current EMS system took shape. It was during the Korea and Vietnam wars when it became apparent that providing emergency care to trauma patients in the field greatly improved their chance of survival. Prior to this the main goal of caregivers was to transport patients to the hospital where they received medical care. (Dickinson, 1999)

Dickinson also credits the popular television show *Emergency*, that premiered in 1971, as portraying firefighters as role models in providing prehospital emergency care and that many Americans look to their own departments to provide similar levels of service.

#### 4. What are the financial issues involved with providing a medical first responder service?

According to Merrill (1990) fire departments tend to garner more public support than other services offered by township governments, with fire departments normally getting a lions share of a towns budget and occupying a majority of a town boards time and attention. Merrill also states “The public no longer views quality fire protection as a luxury that can be afforded in communities blessed with a large tax base. Effective fire protection is seen as a tax payer’s right and a township’s obligation”.

One author researched indicates that we are not just a fire department anymore and the public is expecting more and higher levels of service. (Marrs, 1996, p. 10) He points out that our fire calls for service are dwindling and other calls for service are increasing. Marrs says:

we are being challenged to provide the greatest possible level of service to our communities for the tax dollar spent, and I believe the days when taxpayers never questioned the services provided or lack of services provided, are gone for most departments today.

Karter (1999) reported that fire protection costs in the U. S. rose 48 percent from 1983 to 1996. One factor, among others, he identifies is increased EMS responsibilities requiring increased staffing and in some communities a more frequent replacement of apparatus.

In a cost-effectiveness analysis for southwestern Ontario, completed by Jermyn (1999), he concluded that “the cost per life saved for a rural first-responder defibrillation program is significantly more expensive than for an urban center. However, the cost per life saved is still economical compared with common treatments for other life-threatening illnesses”.

Hasse, (1996) reports that a fire department medical service provides the community with more value from the tax dollars being spent by local fire service agencies.

In summary, there is much literature available regarding medical service as related to the fire service. The findings of others on this subject will have a great influence on the outcome of this research project.

## **PROCEDURES**

### **Definitions**

ALS-Advanced Life Support

BLS-Basis Life Support

EMS-Emergency Medical Service

First Responder-usually the first medically trained personnel at the scene of an emergency.

IAFC-International Association of Fire Chiefs

IAFF-International Association of Fire Fighters

IFSTA-International Fire Service Training Association

NFPA-National Fire Protection Association

### **Limitations**

There was a limited amount of precise information on the actual cost of a medical first responder service and there was limited information on recommended ways for a fire department to provide a medical first responder service. There were no mandates found that would require a fire department to provide a medical first responder service and there are no specific services that a department has to provide. Individual services provided by a fire department depend greatly on the community and the needs of that community.

Another limitation is that we can only provide a determination of the need for a medical first responder service at this time. Any recommendations to begin a medical first responder service stemming from this research will require additional research and planning before attempting to implement a service.

### **Research Methodology**

The research methodology used in this research project was descriptive research to determine the need for a medical first responder program in Monroe.

The procedures used to achieve the purpose of this study were to clarify and report the ways things are at the present time by studying various sources related to this subject and by conducting surveys of similar cities.

The research included a review of relevant material by this author located on the subject. The research material used was obtained from the Learning Resource Center at the National Fire Academy and from the Monroe Fire Department Library. A search of national regulations and standards was also conducted and the applicable material as described by reference in this report was utilized to solve this problem.

A telephone survey of 25 other paid North Carolina fire departments and two South Carolina paid fire departments serving cities of similar size was conducted to determine which of these departments were providing a medical first responder service in their area. The departments were chosen because of their similarities to Monroe such as size, population, and same geographical area. A copy of the survey is included in Appendix A of this project. Information gained from personal observation was used regarding first responder services that volunteer fire departments in Union County were providing. There was also information used regarding the number of calls annually and the average response time for Union EMS. This information was provided by Scott Shew, Director of Union EMS and is included in Appendix B of this project. Additional information regarding response time projections for the Monroe Fire Department was utilized from the N. C. League of Municipalities study of the Public Safety Delivery System and is included in Appendix C of this project.

## **RESULTS**

The research shows that there are no standard expectations of medical services for the fire department in a community and these expectations vary from one area to another. It is apparent through this research, that the public is expecting more and higher levels of service from the fire service each day.

The procedures followed in this research project, included researching available current data to clarify and report the ways things are at the present time and conducting a survey of other departments leading to the following results.

### **Answers to Research Questions**

#### **1. What are the expected benefits from a medical first responder service?**

It is clear from the research that a first responder service and first responders themselves are a critical part of the overall EMS system. The chance of survival of sick or injured patients is enhanced by quick medical attention by qualified personnel. First responders and ambulance personnel are expected to provide emergency medical care at the emergency scene instead of the patient having to wait until they get to the hospital to obtain emergency care. The first responders role is to gain access to the patient, determine what is wrong with the patient, and provide the necessary emergency care for the situation. Many people would die each year before reaching the hospital if it were not for this on scene care.

#### **2. Why should a medical first responder service be provided by the fire department?**

The fire service has advanced from its beginning sometime around 24B.C. in Rome to over 30,000 fire departments in the United States alone. The service has expanded into areas other than fire protection with emergency medical service being one of them. This emergency medical service has advanced during the past several years from providing a basic transport service to providing on scene medical treatment. A limited amount of the research material indicates that first responders can come from other walks of life such as police officers, school teachers, park rangers, bus drivers, and community volunteers. The majority of the research indicates that fire departments should be providing this service. One author reported that the vast majority of fire departments provided a medical service while an NFPA report showed 53.6% of fire departments providing a medical service. The public has grown to expect more and higher levels of service from their fire departments and television shows such as Emergency have lead

the public to expect this type of service from their fire departments. The IAFC and IAFF recently recognized EMS and prehospital care as a legitimate and major role of the fire service.

3. How do other fire departments similar to Monroe provide medical first responder service?

Two main areas were reviewed with regards to other departments that provide medical first responder service, the extent provided and how the service is provided. The literature review revealed general information related to fire departments providing medical first responder services and indicated that the majority of departments were providing this type of service. The personal knowledge of this author of volunteer fire departments in Union County and a telephone survey covering 25 other fire departments in North Carolina and two nearby South Carolina departments provided additional information.

There are 18 volunteer fire departments that serve all areas of Union County outside the incorporated limits of Monroe. A medical first responder program began in Union County in 1984 and all 18 volunteer departments have since began and are currently providing a first responder service for the communities they serve. These departments primarily respond in privately owned vehicles with three to four first responders responding per call.

Eighty-one percent of the departments surveyed, 22 out of 27, are currently providing a medical first responder service for their communities. The survey questions and the results of the survey are shown in Appendix A of this project. Fourteen of the 22 are responding a engine company response with three to four personnel responding with the other eight responding either an engine or a squad unit primarily used for EMS response. Each that is providing a first responder service indicated that response times have improved in their communities since they began their program. Complete survey results are contained in Appendix A of this project.

4. What are the financial issues involved with providing a medical first responder service?

Fire departments require a large portion of a city's budget to provide the necessary level of fire protection, more and more the public is expecting more service or higher levels of service for their tax dollars. Increased EMS service is identified as one factor in the rising cost of fire service today. The research indicated that the cost of a first responder service for a rural area is slightly more expensive than for an urban area, but that the cost per life saved is still economical when compared to common treatments of life threatening illnesses. The survey conducted with this research provided limited information regarding costs of providing medical first responder service because most departments surveyed do not keep the medical cost separate from other operating costs. Of departments that did provide first responder service cost, the results are that the medical cost is a very small percentage of the overall department's budget. The complete survey results can be seen in Appendix A.

In summary, the results show benefits, needs, and reasons for a medical first responder service to be provided by the fire service for the jurisdiction they serve.

## **DISCUSSION**

In the following discussion, the personal conclusions of this author will be included regarding the study results as related to each research question.

### **Answers to Research Questions.**

1. What are the expected benefits from a medical first responder service?

As Goold (1997) indicated, first responders are a critical part of the EMS system and the minutes they save in providing medical care is important to the survival of the sick or injured. Firefighters can enhance their tradition of saving lives by serving in this capacity. (Dickinson,



1999) Bergeron (1999) wrote that first responders become part of the human chain of the EMS system and provide emergency care on the scene and further described their role as to access the patient, determine the problem, and provide the appropriate treatment.

This author's interpretation of this research material is that first responders are a benefit to the sick or injured. They are trained to provide appropriate emergency care and are normally located, because of their fire responsibilities, so they can respond to the scene of an emergency in their jurisdiction quickly. Firefighters traditionally have the desire to help people and this is an extension of that ability to do so.

The organizational implications of these benefits are that the Monroe Fire Department has personnel that have the desire to help people in emergencies. Personnel and equipment are strategically located within the city to improve response times to emergencies.

## 2. Why should a medical first responder service be provided by the fire department?

There are many fire departments providing medical service as pointed out by Page (1997) who stated the vast majority of fire departments are providing a medical service and as by Karter (1999) who reported that 53.6% of the Nation's fire departments provide some type of medical service. The survey showed that in the Monroe area the percentage of departments providing a medical first responder service was higher at 81%. Hasse (1996) reported that the medical service was the fastest growing aspect of the fire service.

Three national organizations agree that EMS is a fire service responsibility. NFPA standard 1201, *Developing Fire Protection Services for the Public* (1994) Section 2-4.1 states "Preservation of human life shall be the primary responsibility of the fire department during fire and other emergencies". According to Marinucci (1999), the IAFC and IAFF both have formally adopted resolutions proclaiming EMS and prehospital care as a legitimate and major service

provided by the fire service. In the report *American Burning Revisited* (1987) the declining demand for fire protection services and the increasing demand for EMS services was documented. Loeb (1993) pointed out that a municipality is not required to furnish fire protection services but is authorized to do so if they desire.

As Dickinson (1999) related, the American fire service has been providing rescue and rendering first aid for years. He also credited the television show *Emergency* for portraying firefighters as role models in providing prehospital care. However, Goold and Vahradian (1997) reported that first responders come from all walks of life such as police officers, park rangers, community volunteers, school teachers, and bus drivers.

This authors interpretation of this study as to why a medical first responder service should be provided by the fire service is that the fire service is the best suited to perform this service because of the past history of the fire service and their past involvement in rescue and first aid. Also, as was indicated in question one, the firefighter's desire to provide service to the public, make it quite natural for firefighters to serve as first responders. Even though there is no legal requirement for Monroe to provide medical service, it is recommended by national organizations and it appears it would be a valuable service to the community.

The organizational implications to the Monroe Fire Department would be that the addition of medical first responder calls will significantly increase the department's call volume, however this increase should not effect the fire protection capabilities of the department.

### 3. How do other fire departments similar to Monroe provide medical first responder service?

The results of the survey regarding how other fire departments provide first responder service show that 22 out of the 27 surveyed, or 81%, provide a first responder service and that the majority of those providing the service provide it utilizing engine companies for medical

response. Based on this author's personal knowledge, all of the 18 volunteer fire departments in Union County provide a first responder service with three to four volunteers per call responding in their personnel vehicles.

This author's interpretation of these results is that the majority of the departments surveyed feel the first responder program is important and necessary based on their comments in the survey. The use of engine companies to respond to these type calls utilizes existing personnel and apparatus that are already strategically located within the response area.

The organizational implications are that the Monroe Fire Department is in the minority by not providing a first responder service. Should the Monroe Fire Department begin providing a medical first responder service, it would be more efficient to utilize existing personnel and apparatus by sending engine companies for these type calls.

#### 4. What are the financial issues involved with providing a medical first responder service?

As Merrill (1990) stated, fire departments tend to gain more public support than other governmental services and normally receive a large portion of the local government's budget, but goes on to say that the public sees quality fire protection services as a right and not as a luxury. Marrs (1996) agrees that the public continues to expect more and higher levels of service. Hasse (1996) reports that medical services provided by the fire department provide more service per tax dollar. Karter, (1999) however identifies EMS as a factor for the increase in fire service cost over the last few years because of increased staffing and additional apparatus replacements. In a cost-effectiveness analysis conducted by Jermyn (1999) he indicated that the cost per life saved is still economical compared to other health care costs. The survey results show, in the departments that separate medical response costs, there is a very small percentage of those departments overall budgets used for medical first response.

This author's interpretation of these findings is that the cost of a medical first responder service is small in comparison with other fire service and health care costs. There are many variables in determining an exact cost of this type program, but it would appear the cost would be relatively minor. As stated in the *Financial Management* text there are some things that it is difficult to affix a monetary value on. It appears that a medical first responder service has many benefits that would be hard to place monetary values on.

The organizational implications of the financial impact would be relatively minor to the Monroe Fire Department. No additional staffing or apparatus would be needed to provide this service. The costs associated with the program would be limited to additional fuel and apparatus maintenance cost. It would be difficult to determine the exact amount of these costs, however they would be minor and would not outweigh the benefits of the program.

## **RECOMMENDATIONS**

The following recommendations are based on the results of this research. These recommendations are fully supported by the data collected during this project and contained in this project. The purpose of this research project was to determine if the Monroe Fire Department should implement a medical first responder service in Monroe to solve the existing problem of no medical first responder service currently being provided. The overall recommendation concluded from this research is that a medical first responder service is needed in Monroe. An additional recommendation is that the Monroe Fire Department should begin providing the medical first responder service in Monroe. It is apparent that this would be great complement to the existing emergency medical care being provided in Monroe and is a service

that is becoming very common in other fire departments. The Monroe Fire Department should finalized the projected cost of a medical first responder program and seek approval from the city administration to proceed with this program. Implementation details of this program will require additional research to effectively implement the program. The Change Management Model presented in the National Fire Academy's *Strategic Management of Change* should be utilized to plan and implement a medical first responder program in Monroe.

It is the desire of this author for future readers and researchers to utilize these recommendations and research material to assist them in determining the need for a first responder program in their communities.

## REFERENCES

- Bergon, J. David (1999). *First Responder*. Upper Saddle River, NJ: Prentice-Hall Inc.
- Dickinson, Edward T. (1999). *Fire Service Emergency Care*. Upper Saddle River, NJ: Prentice-Hall Inc.
- Federal Emergency Management Agency. (1990) *America Burning Revisited*. (U.S. Government Printing Office). Washington, DC.
- Goold, Grant B. and Vahradian, Scott (1997). *Basic First Response*. Upper Saddle River, NJ: Prentice-Hall Inc.
- Hasse, Richard T. (1996, March). First Response To Medical Events. *Fire Engineering*, p.72-76
- Jermyn, Bruce D. (1999). *Cost-Effectiveness Analysis of a Rural/Urban First-Responder Defibrillation Program*. Cambridge, Ontario, Canada: Cambridge Base Hospital Paramedic Program
- Karter, Michael J. (1999). *U.S. Fire Department Profile Through 1998*. Quincy, MA: National Fire Protection Association.
- Kendrick, Virginia A. S. (1995). *Looking Back At Monroe's History*. Charlotte, NC: Delmar Printing and Publishing Company.
- Loeb, Ben F. (1993). *Fire Protection Law in North Carolina*. (5th ed.) Chapel Hill, NC: The University of North Carolina at Chapel Hill.
- Marinucci, Richard A. (1999) *Foreword/Fire Service Emergency Care*. Upper Saddle River, NJ: Prentice-Hall Inc.
- Marrs, Gary B (1996). It's Not Just A Fire Department Anymore. Gerald J. Hoetmer (Eds.) *Fire Services Today Managing a Changing Role and Mission* (pp. 9-14). Washington, DC: International City/County Management Association.
- Merrill, G. Lawrence (1990). *On-Call Fire Departments the Town Boards Responsibilities*. Michigan Townships Association.
- National Fire Protection Association. (1994). *1201 Standard for Developing Fire Protection Services for the Public*. (Standard 1201) Quincy, MA: Author.
- Paulsgrove, Robin & Cote, Auther E. & Linville, Jim L. (eds.) (1997). *Fire Department Administrations and Operations, Fire Protection Handbook*. Quincy, MA: National Fire Protection Association

Page, James O. (1997). Emergency Medical Services, *Fire Protection Handbook*. Quincy, MA: National Fire Protection Association.

Pickard, Sherman. (1998). [North Carolina League of Municipalities, Fire Operations Delivery System]. Unpublished raw data.

**Appendix A****CITY OF MONROE FIRE DEPARTMENT  
FIRST RESPONDER SURVEY**

1. Fully Paid\_\_\_\_\_ Fully Volunteer\_\_\_\_\_ Combination\_\_\_\_\_
2. Does your department provide an ambulance service for your community? \_\_\_ Yes \_\_\_ No
3. Does your department provide a First Responder Service for your community? \_\_\_ Yes \_\_\_ No
4. What is your standard response for medical calls: Engine\_\_\_ Squad \_\_\_ Other\_\_\_\_\_
- Number of personnel responding:\_\_\_\_\_
5. If you provide a First Responder service, have you seen any benefit to the community with respect to shorter response time? \_\_\_ Yes \_\_\_ No
6. What is:    Population Served in your jurisdiction:\_\_\_\_\_
- Approximate number of fire calls annually:\_\_\_\_\_
- Approximate number of medical calls annually:\_\_\_\_\_
- Total number of department personnel:\_\_\_\_\_
- Approximate annual cost of medical first responder program:\_\_\_\_\_
- Total department budget:\_\_\_\_\_
7. Please add any comments relative to EMS in your community.

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Appendix A  
City of Monroe, Fire Department First Responder Survey Results

	Fully Paid	Fully Volunteer	Combination	Ambulance Service	First Responder	Medical Call Response Vehicle	Number of Personnel Responding	Shorter Response Time	Population Served	Annual number of fire calls	Annual number of medical calls	Department Personnel	Cost of First Responder Program	Dept. Budget	Comments
1	Yes			Back-up service	Yes	Engine	3	Yes	16,000	500-550	1000	39	\$5,000	\$1,980,000	Great service - it's hard for the Fire Service not to provide medical services.
2			Yes	No	Yes	Engine	2	Yes	18,000	400	400	47	N/A	\$2,101,000	No comments
3			Yes	No	Yes	Squad	4-6	Yes	35,000	871	N/A	31	N/A	\$647,000	Service is good.
4	Yes			No	Yes	Engine (1st) Rescue Vehicle (2nd)	3	Yes	45,000	6,421	3,852	103	\$2,741,850 Emergency Response Services Budget	\$3,752,682	If not for the First Responder service the citizens would suffer - great program.
5	Yes			No	Yes	Engine	3	Yes	42,000	1,984	1,216	61	\$4,000	\$3,505,567	Run only life threatening calls in regards to First Responder calls.
6	Yes			No	Yes	Engine 25% Squad 75%	2-4	Yes	50,000	2,000	4,500	121	\$15,000	\$6.3 million	Good program in the community for the fire department.
7			Yes	No	Yes in regards to vehicle accidents	Engine & Squad	7	N/A	20,000	800	N/A	43 Paid 15 Volunteer	N/A	\$2.4 million	Had the first responder program ten years ago but the public and city council were not educated on the program therefore it was dropped. It's a good program but it needs to be in the right type of environment.
8	Yes			No	Yes	Engine	3	Yes	65,000	2500	4500	134	40,000	\$7 million	During the first 6 months of the program there were six documented saves.
9	Yes			Yes	Yes	Engine & Rescue Unit	6	Yes	50,000	2,441	5,135	96	\$35-40,000	\$4 million	This program works. Running First Responder for 4 years and it has been successful.
10			Yes	No	Yes	Engine	4	N/A	35,000	1,850	N/A	112 Paid 22 Volunteer	N/A	\$5.5 million	There was a need for the first responder program due to a busy EMS service.
11	Yes			No	Yes	Engine & Squad	5-6	Yes	\$80,000	1,202	4,451	194	N/A	\$7 million	N/A
12			Yes	No	Yes	N/A	4 Volunteers	Yes	39,000	759	2,068	72 paid & volunteer	N/A	\$1.5 million	Very positive program for the department.
13	Yes			No	Yes	Engine & Squad	3	Yes	26,000	1,300-1,400	N/A	61	N/A	\$3 million	Has made a proposal to council to have an EMS program. Would be good for the city to have within the city.
14			Yes	No	No	N/A	N/A	N/A	16,000	250-500	200	5 paid 35 volunteer	N/A	\$375,000	Does not want fire fighters answering medical calls.
	Yes			No	No	N/A	N/A	N/A	21,000	1,200	500	48	N/A	\$2,447,781	Are interested in an early defib. program but has not started it.
	Fully Paid	Fully Volunteer	Combination	Ambulance Service	First Responder	Medical Call Response	Number of Personnel Responding	Shorter Response Time	Population Served	Annual number of fire	Annual number of	Department Personnel	Cost of First Responder	Dept. Budget	Comments

						Vehicle				calls	medical calls		Program		
15	Yes			No	Yes	Engine & Mini Pumper	2	Yes	22,000	800	2,600	Fire Dept. 65	\$1,200 supplemental to each firefighter	\$2.8 million Capital items \$500-600,000	Good program.
16	Yes			No	No	N/A	N/A	N/A	16,500	409	N/A	101 including Public Safety	N/A	\$4.5 million	N/A
17		Yes	No	Yes	Engine	3	Yes	10,000 residents 50,000 transits	800	400	30	\$10,000	\$1.3 million	Proponent of EMS in the community - it has made a difference in the community in regards to saves.	
18	Yes			No	Yes	Engine & Squad	3	Yes	58,000	1,690	186 (March - April)	130	N/A	\$6 million	Would like to expand the program to all 6 stations.
19	Yes			No	Yes	Engine	4	Yes	25,000	500	375	65	N/A	\$2.5 million	N/A
20	Yes			No	No	N/A	4	N/A	24,000	850	400	51	N/A	\$2.6 million	EMS is doing a good job. They only send an engine to vehicle accidents.
21		Yes	No	Yes	Engine	3-4	Yes	20,500	1,750-2,250	1,312-1,875	41 in the process of hiring 15	less than \$10,000 a year	\$2.8 million	Also run rescue and vehicle extrication.	
22	Yes	No	Yes	Quick response vehicle	2	Yes	15,000	Total of 900	18 Paid 18 Volunteer	N/A	\$1 million	County wide ALS tax rate has provided a better care for the community.			
23	Yes		No	No	N/A	N/A	N/A	22,167	969-980	N/A	55	N/A	\$3,118,060	EMS service is provided by the county.	
24	Yes		No	Yes	Engine & Squad	2-3	Yes	46-47,000	3178	1589	86	N/A	\$5.2 million	EMS service is provided by the county.	
25	Yes	No	Yes	Engine	4	Yes	10,000	375	1200	27 Paid 8 Volunteer	N/A	\$1.3 million	N/A		
26	Yes		No	Yes	Engine	3-4	Yes	52,000	504	2,468	72 Full-time 1 Part-time	\$4,100	\$3.2 million	First starting running First Responder on all calls now only running First Responder calls on life threatening emergencies.	

## **Appendix B**

### **Union EMS Survey**

- 1- Number of calls last year (Jan. 1999 – Dec. 1999) within the city limits: 3,496
- 2- Number of Emergency Calls: 2,693    Number of Non-emergency Calls: 803
- 3- Average response time within city:
  - 2 ambulances stationed at hospital: 7.62 minutes
  - 1 ambulance stationed at Williams Rd.: 7.64 minutes
- 4- Number of ambulances staffed daily:
  - 8 ambulances staffed 24 hr/7days
  - 2 Quick Response Vehicles staffed 24 hr/7 days
- 2 Prime-time convalescence transport 8 hr/M-F only (8:00AM-4:00 PM and 10:00 PM – 6:00 AM)
- 5- Number of ambulances in the city only:
  - 3 ambulances 24hr/7day
- 2 Prime-time convalescence transport 8 hr/M-F only (8:00AM-4:00 PM and 10:00 PM – 6:00 AM)
- 6- Are all of the ambulances paramedic units?
  - All paramedic staffed with EMT-I at the minimum level

May 1, 2000

National Fire Academy  
16825 South Section Avenue  
Emmitsburg, Maryland 21727

Dear Executive Fire Officer Program Personnel:

Please find the attached Applied Research Project. This project is for the Financial Management Course that I completed in July 1998, which was prior to my acceptance in the EFO Program. Upon speaking with Mr. Chuck Burkell, he agreed to allow the Financial Management Course to count as an elective pending the completion of this research project.

Thank you for your assistance and please contact me should you have questions or comments.

Sincerely,

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Monroe, N.C. 28110  
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